



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/521,545	03/09/2000	Dale G. Swan	9896.145.0	2248
23552	7590	07/08/2002		
MERCHANT & GOULD PC P.O. BOX 2903 MINNEAPOLIS, MN 55402-0903			EXAMINER CELSA, BENNETT M	
			ART UNIT 1627	PAPER NUMBER 18
			DATE MAILED: 07/08/2002	

Please find below and/or attached an Office communication concerning this application or proceeding.

file copy

Office Action Summary	Application No. 09/521,545	Applicant(s) Swan et al.
	Examiner Bennett Celsa	Art Unit 1627
<p>-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --</p>		
<p>Period for Reply</p> <p>A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>three</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.</p> <p>- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.</p> <p>- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.</p> <p>- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.</p> <p>- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).</p> <p>- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).</p>		
<p>Status</p> <p>1) <input checked="" type="checkbox"/> Responsive to communication(s) filed on <u>Apr 24, 2002</u>.</p> <p>2a) <input checked="" type="checkbox"/> This action is FINAL. 2b) <input type="checkbox"/> This action is non-final.</p> <p>3) <input type="checkbox"/> Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under <i>Ex parte Quayle</i>, 1935 C.D. 11; 453 O.G. 213.</p>		
<p>Disposition of Claims</p> <p>4) <input checked="" type="checkbox"/> Claim(s) <u>1-9 and 11-32</u> is/are pending in the application.</p> <p>4a) Of the above, claim(s) <u>11-28</u> is/are withdrawn from consideration.</p> <p>5) <input type="checkbox"/> Claim(s) _____ is/are allowed.</p> <p>6) <input checked="" type="checkbox"/> Claim(s) <u>1-9 and 29-32</u> is/are rejected.</p> <p>7) <input type="checkbox"/> Claim(s) _____ is/are objected to.</p> <p>8) <input type="checkbox"/> Claims _____ are subject to restriction and/or election requirement.</p>		
<p>Application Papers</p> <p>9) <input type="checkbox"/> The specification is objected to by the Examiner.</p> <p>10) <input type="checkbox"/> The drawing(s) filed on _____ is/are a) <input type="checkbox"/> accepted or b) <input type="checkbox"/> objected to by the Examiner. Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).</p> <p>11) <input type="checkbox"/> The proposed drawing correction filed on _____ is: a) <input type="checkbox"/> approved b) <input type="checkbox"/> disapproved by the Examiner. If approved, corrected drawings are required in reply to this Office action.</p> <p>12) <input type="checkbox"/> The oath or declaration is objected to by the Examiner.</p>		
<p>Priority under 35 U.S.C. §§ 119 and 120</p> <p>13) <input type="checkbox"/> Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f). a) <input type="checkbox"/> All b) <input type="checkbox"/> Some* c) <input type="checkbox"/> None of: 1. <input type="checkbox"/> Certified copies of the priority documents have been received. 2. <input type="checkbox"/> Certified copies of the priority documents have been received in Application No. _____. 3. <input type="checkbox"/> Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).</p> <p>*See the attached detailed Office action for a list of the certified copies not received.</p>		
<p>14) <input type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e). a) <input type="checkbox"/> The translation of the foreign language provisional application has been received.</p> <p>15) <input type="checkbox"/> Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.</p>		
<p>Attachment(s)</p> <p>1) <input type="checkbox"/> Notice of References Cited (PTO-892) 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____</p> <p>2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)</p> <p>3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s). <u>15</u> 6) <input type="checkbox"/> Other:</p>		

Art Unit: 1627

Response to Amendment

Applicant's amendment dated 4/24/02 in paper no. 16 is acknowledged.

Status of the Claims

Claims 1-9 and 11-32 are currently pending.

Claims 1-10 and 29-32 are under consideration to the extent they read on the elected invention.

Claims 11-28 are withdrawn from further consideration as being drawn to a nonelected invention.

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Election/Restriction

2. Applicant's election of Group I (claims 1-10) in Paper No. 9 (dated 7/13/01) is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

3. Applicant's further election of the compound CH₂=CH(CH₃)-C(=O)-O-CH₂- CH-O-CH₂ in Paper No. 13 (dated 10/15/01 which reads on claims 1-9 and 29-32 is acknowledged.. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

4. Claims 11-28 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention.

Art Unit: 1627

5. This application contains claims 11-29 drawn to a nonelected invention. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Withdrawn Objection(s) and/or Rejection(s)

Applicant's specification amendment has overcome the objection to the specification directed to the trademarks: "NucleoLink TM" (e.g. page 2); "Reacti-Bind TM" (e.g. page 3); "DNA-BIND TM" (e.g. page 3).

Applicant's amendment and arguments have overcome the indefinite rejection of claims 1-10 (Items A.-G.) in the prior office action.

Applicant's amendment and arguments have overcome the anticipation rejection of claim 1 over the Nagasawa et al., J. Applied Biochemistry Vol. 7, pages 430-437 (1985).

Outstanding Objection(s) and/or Rejection(s)

6. Claims 1-3, 5-8, 29 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kalal et al. US Pat. No. 4,332,694 (1/82).

Initially, it is noted that present claims 1-3, 5-8 , 29 and 30 are drawn to "product by process claims" which define the product by its method of making (e.g. screening). See MPEP 2113 directed to "Product by Process Claims". Even though product - by process claims are limited by and defined by the process, determination of patentability is *based on the product itself*.

Art Unit: 1627

The patentability of a product does not depend on its method of production. If the product in the product - by - process claim is the *same as or obvious from* a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe* , 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). When the prior art discloses a product which *reasonably appears to be either identical with or only slightly different* than a product claimed in a product - by - process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown* , 173 USPQ 685, 688 (CCPA 1972)

Accordingly, Kalal et al. disclose **epoxide containing (hydrophilic) polymers** (e.g. acrylate, methacrylates, vinyls see abstract; col. 2 (especially lines 1-18 and 51-65; poly 2,3 epoxypropyl acrylate: see examples; patent claims, especially patent claim 8) which anticipates a composition within the scope of present claims 1 and 29. It is noted that intended use limitations are not afforded patentable weight (e..g "for attaching a target molecule to the surface of a substrate"; "wherein the copolymer is attached to the surface of the substrate by formation of a

Art Unit: 1627

covalent bond and the epoxy group can form a covalent bond with a target molecule". Further, it is noted that, since function flows from structure, the reference "reagent compositions", which comprise epoxy monomers and acrylic/vinyl monomers within the scope of the presently claimed invention, must possess, if not explicitly, then inherently, functions attributed to the presently claimed "reagent compositions" (e.g. ability to bind targets, covalently attach to substrate etc.)

Accordingly, the ability of the reference epoxy monomer-acrylate/methacrylate/ vinyl copolymers to attach to a substrate (covalently or otherwise), bind "targets"; as well as its method of manufacture; is not afforded patentable weight, or is alternatively, inherently present in the reference compositions..

However, the intended use limitation of the epoxy containing copolymers to "attach a target molecule" is nevertheless taught by the reference (e.g. see col. 1, lines 55-65).

Similarly, although the method of making the polymer is not relevant to patentability if the prior art teaches a composition within the scope, the Kalal et al. reference nevertheless makes in epoxide containing polymers utilizing monomers within the scope of the presently claimed invention (e.g. see col. 2; examples and patent claims).

The further attachment of "photoreactive groups" is suggested (e.g. diazotization: col. 39-45) and specifically taught (e.g. see examples, especially example 1: and derivation with azobisisobutyronitrile compound).

Art Unit: 1627

The Kalal et al. epoxide containing co polymer can be (and is) adapted to be covalently attached to a “surface of a substrate” (e.g. inorganic porous materials such as glass, silica , asbestos etc.: see col. 2 and examples) and bind “targets”.

Discussion

Applicant’s amendment and arguments address the anticipation rejection over the above Kalal et al. patent reference was considered but deemed nonpersuasive for the following reasons.

Initially, it is noted that the above rejection was rewritten as a 102/103 product by process rejection and further modified in response to applicant’s claim amendments.

Applicant first argues that Kalal et al. does not teach or suggest that the monomer containing a pendant epoxy group is reacted with one or more diluent monomers/polymers selected from acrylics, vinyls, nylons, polyurethanes and polyethers.

Applicant’s argument is not convincing since the Kalal polymers, which comprise epoxy monomers and acrylic/vinyl monomers within the scope of the presently claimed invention, are “reagent compositions” within the present claim scope, even though the prior product was made by a different process.” See *In re Thorpe* , 227 USPQ 964, 966 (Fed. Cir. 1985).

Applicant next argues that the Kalal et al. reference teaches “a polymer is sorbed onto a porous substrate” and not “covalently attached to the substrate” as presently claimed.

This argument is not convincing, since, intended use limitations are not afforded patentable weight. Additionally, since function flows from structure, the reference “reagent compositions”, which comprise epoxy monomers and acrylic/vinyl monomers within the scope of the presently

Art Unit: 1627

claimed invention, must possess, if not explicitly, then inherently, functions attributed to the presently claimed “reagent compositions” (e.g. ability to bind targets, covalently attach to substrate etc.

Accordingly, the above 102/103 rejection is hereby retained.

7. Claims 1-3, 5-8, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kalal et al. US Pat. No. 4,332,694 (1/82) and Shi et al. US 5,919,626 (7/99; filed 6/97)..

Initially, it is noted that present claims 1-3, 5-8 , 29 and 30 are drawn to “product by process claims” which define the product by its method of making (e.g. screening). See MPEP 2113 directed to “Product by Process Claims “ . Even though product - by process claims are limited by and defined by the process, determination of patentability is *based on the product itself*. The patentability of a product does not depend on its method of production. If the product in the product - by - process claim is the *same as or obvious from* a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe* , 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). When the prior art discloses a product which *reasonably appears to be either identical with or only slightly different than a*

Art Unit: 1627

product claimed in a product - by - process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown* , 173 USPQ 685, 688 (CCPA 1972)

Accordingly, Kalal et al. disclose **epoxide containing (hydrophilic) polymers** (e.g. acrylate, methacrylates, vinyls see abstract; col. 2 (especially lines 1-18 and 51-65; poly 2,3 epoxypropyl acrylate: see examples; patent claims, especially patent claim 8) which anticipates a composition within the scope of present claims 1 and 29. It is noted that intended use limitations are not afforded patentable weight (e.g "for attaching a target molecule to the surface of a substrate"; "wherein the copolymer is attached to the surface of the substrate by formation of a covalent bond and the epoxy group can form a covalent bond with a target molecule". Further, it is noted that, since function flows from structure, the reference "reagent compositions", which comprise epoxy monomers and acrylic/vinyl monomers within the scope of the presently claimed invention, must possess, if not explicitly, then inherently, functions attributed to the presently claimed "reagent compositions" (e.g. ability to bind targets, covalently attach to substrate etc.)

Accordingly, the ability of the reference epoxy monomer-acrylate/methacrylate/ vinyl copolymers to attach to a substrate (covalently or otherwise), bind "targets"; as well as its method of manufacture; is not afforded patentable weight, or is alternatively, inherently present in the reference compositions..

Art Unit: 1627

However, the intended use limitation of the epoxy containing copolymers to “attach a target molecule” is nevertheless taught by the reference (e.g. see col. 1, lines 55-65).

Similarly, although the method of making the polymer is not relevant to patentability if the prior art teaches a composition within the scope, the Kalal et al. reference nevertheless makes in epoxide containing polymers utilizing monomers within the scope of the presently claimed invention (e.g. see col. 2; examples and patent claims).

The further attachment of “photoreactive groups” is suggested (e.g. diazotization: col. 39-45) and specifically taught (e.g. see examples, especially example 1: and derivation with azobisisobutyronitrile compound).

The Kalal et al. epoxide containing co polymer can be (and is) adapted to be covalently attached to a “surface of a substrate” (e.g. inorganic porous materials such as glass, silica , asbestos etc.: see col. 2 and examples) and bind “targets”.

The Kalal et al. reference composition differs from the presently claimed invention by failing to teach the “intended use” of the target; as being a nucleic acid to directly attached underivatized nucleic acid and the use of silanized glass containing epoxides.

However, the Shi et al. Reference teaches that an epoxy groups can directly bind unmodified nucleic acids as targets; and additionally, the preferential use of polymerized epoxides on silanized glass surfaces.

Accordingly, one of ordinary skill in the art would be motivated to modify the Kalal et al. Reference method to employ nucleic acids as targets for attachment to polymeric epoxides as

Art Unit: 1627

disclosed in Kalal et al. And the further use of silanized glass for the benefits obtained therefrom (e.g promote N.A. attachment) as taught by the Shi et al. Reference.

Thus, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the Kalal et al. reference composition to utilize unmodified nucleic acids as target compounds and silanized glass for the benefits obtained therefrom as taught by the Shi reference.

Discussion

Applicant's amendment and arguments address the anticipation rejection over the above Kalal et al. patent reference was considered but deemed nonpersuasive for the following reasons.

Initially, it is noted that the above rejection was rewritten as a 102/103 product by process rejection and further modified in response to applicant's claim amendments.

Applicant first argues that Kalal et al. does not teach or suggest that the monomer containing a pendant epoxy group is reacted with one or more diluent monomers/polymers selected from acrylics, vinyls, nylons, polyurethanes and polyethers.

Applicant's argument is not convincing since the Kalal polymers, which comprise epoxy monomers and acrylic/vinyl monomers within the scope of the presently claimed invention, are "reagent compositions" within the present claim scope, even though the prior product was made by a different process." See *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Applicant next argues that the Kalal et al. reference teaches "a polymer is sorbed onto a porous substrate" and not "covalently attached to the substrate" as presently claimed.

Art Unit: 1627

This argument is not convincing, since, intended use limitations are not afforded patentable weight. Additionally, since function flows from structure, the reference “reagent compositions”, which comprise epoxy monomers and acrylic/vinyl monomers within the scope of the presently claimed invention, must possess, if not explicitly, then inherently, functions attributed to the presently claimed “reagent compositions” (e.g. ability to bind targets, covalently attach to substrate etc.

Applicant next argues that the Shi reference does not teach or suggest the reaction of an epoxy containing monomer with monomer/polymers selected from acrylics, vinyls, nylons, polyurethanes and polyethers.

In response to applicant's arguments against the Shi reference individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Accordingly, the above 103 rejection is hereby retained.

Art Unit: 1627

8. Claims 1, 5-9 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al. US Pat. No. 5,942,555 (8/99: filed 3/96) and Shi et al. US Pat. No. 5,919,626 (7/99: filed 6/97).

Swanson et al. teach chain transfer agents (e.g. Yi-X-SH: see col. 5) that comprise:

- a. Y is an organic radical(s) comprising one or more photoactivatable groups (e.g. aryl ketones, benzophenones are preferred: see col. 5);
- b. X is an optional spacer (see col. 6-7); and
- c. SH.

The Swanson photoactivatable chain-transfer groups can be used in a variety of polymerization (including copolymerization: see col. 13, lines 38-50)) reactions that employ chain-transfer agent (e.g. see col. 7). Accordingly, the chain transfer groups can be used as photopolymers, including the simultaneous or sequential attachment of the polymer to a support surface (e.g. see col. 13, especially lines 1-10 and lines 50-top of col. 14), including *silylated surfaces of glass, ceramic or metal as well as plastics* (e.g. see col. 13, lines 25-38) (emphasis provided). Swanson teaches the use of diluent hydrophilic monomers for polymerization which are within the scope of the present invention (e.g. see col. 3,7-8). The Swanson photopolymers can be used to “immobilize desired molecules onto the surface” (e.g. see col. 14, lines 5-11) including the attachment of protein and nucleic acid targets (e.g. see Examples, especially examples 14 and 33-35). However, it is noted that attachment of the nucleic acids to the chain transfer groups (e.g. SH) of the Swanson photopolymer *requires that the oligonucleotide be modified* (e.g. see Example 35 requiring thiol

Art Unit: 1627

(SH) nucleic acid modification) in order to covalently immobilize the oligonucleotide to the Swanson photopolymer (emphasis provided). However, it is also noted that the reference specifically discloses that *chain groups other than SH can be utilized* (e.g. see Abstract; col. 7, lines 10-27 (emphasis provided).

The Swanson reference reagent composition (e.g. photopolymer) differs from the presently claimed invention by:

- a. utilizing epoxide groups instead of SH groups to attached the target (e.g oligonucleotide);
- b. utilizing silanized glass instead of silylated glass as the treated surface.

However, the Shi et al. Patent reference teaches that organosilanes (e.g. silanization) can be used to “tailor surfaces” (especially glass) with mercapto (SH) and/or epoxy groups” (e.g. see col. 5, lines 1-5) in order to permit the covalent attachment of “*unmodified*” oligonucleotides (e.g. see col. 7, especially lines 25-40) (emphasis provided).

Accordingly, one of ordinary skill in the art would be motivated to modify the Swanson reference method of attaching target groups (e.g. oligonucleotides) to utilize silanized surfaces (e.g. glass) and additionally utilize epoxy groups alone or in conjunction with SH groups to bind targets (especially oligonucleotides) in order to permit the attachment of the target (e.g. oligonucleotide) without derivation of the target, with a reasonable expectation of success since the Swanson reference composition and means of attachment of target compounds utilizes SH or other groups in the alternative to bind target compounds and uses similar (and in some cases identical) substrates (e.g. glass) for attachment of the reagent composition.

Art Unit: 1627

Thus it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to modify the Swanson reference reagent and method of attaching a target (e.g oligonucleotide) by modifying the Swanson photopolymer composition to substitute epoxy groups (or epoxy and SH groups) for the SH groups disclosed in Swanson for use in applying to silanized surfaces (e.g. glass) in order to realize the benefits therefrom such as the attachment of targets (e.g. oligonucleotides) without the need to modify the target (e.g. oligonucleotide) as taught by the Shi et al. Patent reference.

It is noted that present claims 1-9 and 29-32 are drawn to "product by process claims" which define the product by its method of making (e.g. screening). See MPEP 2113 directed to "Product by Process Claims". Even though product - by process claims are limited by and defined by the process, determination of patentability is *based on the product itself*. The patentability of a product does not depend on its method of production. If the product in the product - by - process claim is the *same as or obvious from* a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985) (citations omitted). Once the Examiner provides a rationale tending to show that the claimed product appears to be the same or similar to that of the prior art, although produced by a different process, the burden shifts to applicant to come forward with evidence establishing an unobvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289, 292 (Fed. Cir. 1983). When the prior art discloses a product which *reasonably appears to be either identical with or only slightly different than a*

Art Unit: 1627

product claimed in a product - by - process claim, a rejection based alternatively on either section 102 or section 103 of the statute is eminently fair and acceptable. As a practical matter, the Patent Office is not equipped to manufacture products by the myriad of processes put before it and then obtain prior art products and make physical comparisons therewith." *In re Brown* , 173 USPQ 685, 688 (CCPA 1972)

Additionally, it is further noted that intended use limitations are not afforded patentable weight (e.g "for attaching a target molecule to the surface of a substrate"; "wherein the copolymer is attached to the surface of the substrate by formation of a covalent bond and the epoxy group can form a covalent bond with a target molecule". Further, it is noted that, since function flows from structure, the reference "reagent compositions", which comprise epoxy monomers and acrylic/vinyl/polyacrylamide (etc). monomers within the scope of the presently claimed invention, must possess, if not explicitly, then inherently, functions attributed to the presently claimed "reagent compositions" (e.g. ability to bind targets, covalently attach to substrate etc.)

9. Claims 1-9 and 29-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swanson et al. and Shi et al. as applied to claims 1, 5-9 and 29-32 above, and further in view of Kalal et al. US Pat. No. 4,332,694(6/82).

The above obviousness rejection is hereby incorporated by reference in its entirety.

Art Unit: 1627

The Swanson and Shi et al. combined teaching differs from the presently claimed invention by failing to specifically teach the use of (allyl) glycidyl / (meth)acrylate/glycidyl vinyl monomers for making polymeric reagents.

However, Kalal et al. disclose epoxide containing polymers (e.g. see abstract; col. 2 (especially lines 1-18 and 51-65; poly 2,3 epoxypropyl acrylate: see examples; patent claims). Although the method of making the polymer is not relevant to patentability if the prior art teaches a composition within the scope, the Kalal et al. reference nevertheless makes epoxide containing polymers utilizing monomers within the scope of the presently claimed invention including the use of (allyl) glycidyl / (meth)acrylate/glycidyl vinyl monomers (e.g. see col. 2; examples and patent claims). The further attachment of “photoreactive groups” is suggested (e.g. diazotization: col. 39-45) and specifically taught (e.g. see examples, especially example 1: and derivation with azobisisobutyronitrile compound). It is further noted that the Kalal et al. epoxide containing polymer can be (and is) adapted to be covalently attached to a “surface of a substrate” (e.g. inorganic porous materials such as glass, silica , asbestos etc.: see col. 2 and examples).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time of applicant's invention to employ the use of known monomers for making epoxylated resins as taught by Kalal et al. in the combined teaching of the Shi et al. and Swanson et al. References with a reasonable expectation of success.

Art Unit: 1627

Discussion

Applicant's arguments directed to the above obviousness rejections over the Swanson and Shi reference and further the Kalal reference, were considered but deemed nonpersuasive for the following reasons. It is noted that the above obviousness rejections were modified in response to applicant's amendment.

Applicant argues that the above references (e.g. Swanson, Shi or Kalal) fail to teach or suggest that the monomer containing a pendant epoxy group is reacted with one or more diluent monomers/polymers selected from acrylics, vinyls, nylons, polyurethanes and polyethers.

Applicant's argument is not convincing since the combined reference teaching renders obvious epoxy monomers and acrylic/vinyl/polyacrylamide (etc.) monomers within the scope of the presently claimed invention, which are "reagent compositions" within the present claim scope, even though the prior product was made by a different process." See *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985).

Additionally, in response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Accordingly, the above 103 rejections are hereby retained.

Art Unit: 1627

New Objection (s) and/or Rejection (s)

10. Claim 30 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The term "hydrophilic" in claim 30 is a relative term which renders the claim indefinite. The term "hydrophilic" is not defined by the claim,; nor does the specification provide a standard for ascertaining the requisite degree of "hydrophilicity" or "water solubility" , and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

General information regarding further correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Celsa whose telephone number is (703) 305-7556.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jyothsna Venkat (art unit 1627), can be reached at (703)308-0570.

Any inquiry of a general nature, or relating to the status of this application, should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Bennett Celsa (art unit 1627)
July 5, 2002

BENNETT CELSA
PRIMARY EXAMINER
